<u>REMARKS/ARGUMENTS</u>

In the Office Action mailed February 5, 2007, Claims 1-15, 17-22, 24, and 26-40 were rejected. In response, Applicants hereby request reconsideration of the application in view of the amended claims and the below-provided remarks. Claims 1-12, 29, and 40 are amended. No claims have been added.

<u>Claim Rejections under 35 U.S.C. § 101</u>

Claims 1-15, 17-22, 24, and 26-40 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. In particular, the Office Action states that Claim 1 would reasonably be interpreted by one of ordinary skill in the art as "self-descriptive binary data structure steps" and therefore software. Applicants disagree and traverse the rejection of Claims 1-15, 17-22, 24, and 26-40.

Software is clearly statutory and has been statutory at least since *Diamond v. Diehr* in 1981. 450 U.S. 175, 209 U.S.P.Q. 1 (1981). The U.S. Supreme Court has declared that Congress chose expansive language in 35 U.S.C. § 101 to include "anything under the sun that is made by man." *Diamond v. Chakrabarty*, 447 U.S. 303, 308-09, 206 USPQ 193, 197 (1980); M.P.E.P § 2106.IV.A, 8th ed, rev. 5 (Aug. 2006). This perspective has also been embraced by the Federal Circuit. M.P.E.P. § 2106.IV.A. The Federal courts have held that 35 U.S.C. § 101 does have certain limits. *Id*. The courts have found that the four statutory categories of inventions, machine manufacture, composition of matter, and process, have only limited exceptions: abstract ideas, laws of nature, and natural phenomena. *Id*. The general category of "software" does not fit within one of the three judicially recognized exceptions. Further, the Office Action provides no support for a claim that computer

software is non-statutory, and thus has not met the U.S. Patent Office's burden of establishing a *prima facie* case. *See in re Oetiker*, 997 F.2d 1443, 1445, 24 USPQ2d 1442, 1444 (Fed. Cir. 1992) ("The examiner bears the initial burden . . . of presenting a *prima facie* case of unpatentability."); M.P.E.P. § 2106.IV.D.

While software in general is not excluded as non-statutory, certainly some implementation of abstract ideas in the form of mathematical functions incorporated in software may be non-statutory. *See e.g. Parker v. Flook*, 437 U.S. 584 (1978) (mathematical formula coded in software found non-statutory). To determine if an invention is statutory, software or not, the M.P.E.P. in § 2106 has provided a guide for examiners in determining if the claimed invention falls within the judicial exceptions to § 101. M.P.E.P. § 2106.IV.C. *et seq.* Claims 1-15, 17-22, 24, and 26-40 in the Application are clearly not natural phenomena or laws of nature. While there is some math involved in any computer software at its ultimate root, Claims 1-15, 17-22, 24, and 26-40 do not recite any mathematical equations and do not fall under the abstract idea exception.

Even for inventions that are found to include a judicial exception, the inquiry does not end with that finding. M.P.E.P. § 2106.IV.C.1. USPTO personnel must then ascertain the scope of the claim to determine whether it covers either a judicial exception to § 101 or a practical application of a judicial exception. *Id.* A practical application of a judicial exception may well be deserving of patent protection. *Id.*; *see Diehr*, 450 U.S. at 187. The test laid out for determining if the claimed invention is a practical application of an abstract idea is laid out in § 2106 of the MPEP as a two prong test. M.P.E.P. § 2106.IV.C.2. "A claimed invention is directed to a practical application of a 35 U.S.C. 101 judicial exception when it: (A) "transforms" an article or physical object to a different state or thing; or (B) otherwise produces a useful, concrete and tangible result, ..." *Id.*

While the Applicants maintain that Claims 1-15, 17-22, 24, and 26-40 clearly do not fall under any of the judicial exceptions and do not include an abstract idea, even if the Claims did include an abstract idea in the form of a mathematical exception, the Applicants assert that Claims 1-15, 17-22, 24, and 26-40 are a practical application and are statutory. Under the second prong of the practical application test, the Claims must produce a useful, concrete, and tangible result. *Id.* The standard for a useful, a tangible, and a concrete result are set forth in § 2016.IV.C.2.(2).

For an invention to be useful, the invention must meet the utility requirement of 35 U.S.C. § 101 and must be (i) specific, (ii) substantial, and (iii) credible. *Id.* The Office Action has not provided *prima facie* case or any evidence at all that Claims 1-15, 17-22, 24, and 26-40 do not meet the utility requirement of § 101. *Id.* As set forth in the specification, the claimed invention beneficially decreases the time and complexity associated with communicating a binary data structure between a source and a client, and reduces the size and processing complexity of data structures that may be used in conjunction with data transfers to a storage system. Application of Corcoran et al., filed November 20, 2003, application no. 10/718,420 (hereinafter "Application") at ¶ 15.

"The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing." M.P.E.P. § 2106.IV.C.2.(2).b). The Applicants respectfully assert that the Office Action has not put forth a *prima facie* case that Claims 1-15, 17-22, 24, and 26-40 do not provide a tangible result. The claim need only produce a "real-world result." *Id.* Claims 1-15, 17-22, 24, and 26-40 provide a real world and measurable result, the reduced bandwidth and processing costs associated with transferring data.

The "concrete result" analysis section of § 2106.IV.C.2.(2) states that "this question arises when a result cannot be assured. In other words, the process must have a result that can be substantially repeatable or the process must substantially produce the same result again." M.P.E.P. § 2106.IV.C.2.(2).c). The Applicants respectfully assert that the Office Action has not put forth a *prima facie* case that Claims 1-15, 17-22, 24, and 26-40 do not provide a concrete result. The Applicants respectfully assert that the invention of Claims 1-15, 17-22, 24, and 26-40 are not of the type where results vary and are not repeatable and the results are therefore concrete.

The Applicants respectfully assert that Claims 1-15, 17-22, 24, and 26-40 clearly meet the second prong of the practical application test set forth in MPEP § 2106.IV.C.2 and that Claims 1-15, 17-22, 24, and 26-40 are statutory matter under 35 U.S.C. § 101. In addition, the Applicants respectfully assert that Claims 1-15, 17-22, 24, and 26-40 meet the first prong of the practical application test in that the Claims generate and transmit a self-descriptive binary data structure. The specification clearly describes the source and target devices as comprising CPU's, memory, and communication devices. *See* Figure 6. Furthermore, Claim 13 recites, in pertinent part, "..the target communication device is configured to process an executable, the executable stored in the … data structure." *See* Claim 13. The executable, in one given example, may include a microcode reboot image for updating the target device. *See* Para. 0037 - 0039. Rebooting and updating a machine produce a real world and tangible result; in fact a result that can be heard as the machine or device shuts down and is restarted.

Furthermore, Applicants respectfully submit that each of the Independent Claims 1, 13, 18, 27, 29, and 40 recite physical or tangible elements. For example, Claim 1 as amended, recites "a computer readable storage medium storing a self-descriptive binary data structure executable on a

computer processor…" Claims 13 and 27 recite communication channels, source and target communication devices, and computer readable storage mediums. Claim 18 recites communication interfaces and target devices. Claim 29 recites computer readable storage mediums, computer processors, and target devices. Claim 40 recites target devices.

Therefore, Applicants respectfully submit that Claims 1-15, 17-22, 24, and 26-40 are in condition for allowance.

Claim Rejections under 35 U.S.C. § 112

Claims 1, 13, and 29-36 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which applicant regards as the invention.

Computer Readable Storage Medium

The Applicants are required by 37 C.F.R. § 1.71 to "include a written description of the invention or discovery and the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same." Applicants submit that any person skilled in the art of computer programming, data structures, and data storage will recognize the term "computer readable storage medium," and therefore a definition of the term in the specification is not required.

In fact, the Examiner succinctly defined "computer readable storage medium" while stating "for compact prosecution, examiner assumes, and treated [sp.] 'computer readable storage medium' corresponds [sp.] to any physical medium for example computer disk[s], or computer hard drive and

like [sp.]." As such, Applicants submit that any person skilled in the art will likewise come to the same conclusion as the Examiner that "computer readable storage medium" is in fact "storage medium" that is readable by a computer.

Capable of Being Stored

The Office Action states that "capable of being stored in a computer readable storage medium" is indefinite because "data structure" is not actually stored in a computer readable storage medium. Applicants disagree. Applicants submit that the data structure is indeed stored in a computer readable storage medium. For example, the specification states "...the target 604 may store 1108 the MRB image 700 in the local memory device 606, for example in a buffer." Application, Para. 0063. Any one skilled in the art recognizes the buffer as a type of memory device, or in other words, a memory device that is computer readable because a computer can access and read the device.

The data structure is only capable of being stored in a computer readable storage medium, such as electronic memory, or a hard drive. It is therefore unclear to the Applicants as to where the Examiner believes the data structure is stored. .

Means For

It is unclear to the Examiner which structures are being used to perform the functions described in Claim 40. Applicant respectfully invites the Examiner to review Figure 11 and the corresponding paragraphs (0062 and 0063) which describe the modules and devices that generate, transmit, and process the self-descriptive data structure. The specification, therefore does identify structures that perform the functions of Claim 40.

Claims 1-14, 16-23, 25-27, 29-36, and 38-40 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Sharon. Applicants respectfully disagree.

Previously, Applicants essentially argued that Sharon does not anticipate the claimed invention because Sharon does not teach binary data structures having the elements as claimed and therefore could not teach the transfer of such data structures. In fact, Sharon discusses how his invention benefits from not being binary. *See* Sharon, Para. 0013, line 5. The Examiner responded by stating "[e]ach byte of binary data is encoded as a 2-character hexadecimal number: the first ASCII character representing the high-order 4 bits, and the second the low order 4 bits of the byte." The Examiner then refers to Sharon, page 2, col.1, 0020. A review of paragraph 0020 reveals that the word binary is not mentioned. In fact, the word binary is only found in paragraph 0013 when Sharon discusses the benefit of not needing binary protocols, and paragraph 0024 when Sharon discusses CRC vs. checksum.

Conversely, the claimed data structure is a true binary image, and as such, no conversion from ASCII characters is required prior to transmission. A conversion from s-records beneficially enables interfacing with older generation hardware that uses s-records and s-record images. *See* Para. 0063. As claimed, the self-descriptive binary data structure includes various features not mentioned by Sharon. These features include, but are not limited to a plurality of data segments where each data segment comprises a header and a data field, and a target data set within the data field.

Furthermore, the Office Action states "since the applicant has not specified how the amended language distinguishes the claimed invention from Sharon beyond simply asserting that it does

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without further support." Applicants have not simply asserted that the claimed invention is distinguishable over Sharon. Applicants **have** illustrated that Sharon does not teach a self-descriptive binary data structure, but in fact Sharon dismisses binary structures by stating "not needing binary protocols." Applicants, therefore, again emphasize that **Sharon does not teach a binary system.** An s-record is not a binary record. Application, Para. 0002. The fact that Sharon uses s-records is evidence that the claimed invention is patentable over Sharon, not evidence that Sharon anticipates the claimed invention.

As such, Applicants submit that the rejection based on 35 U.S.C. § 102(e) has been improperly asserted. Applicants, therefore, request the removal of the rejection under 35 U.S.C. § 102(e) with respect to Claims 1-14, 16-23, 25-27, 29-36, and 38-40.

Claims Rejection under 35 U.S.C. § 103

Claims 15, 24, 28, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharon as applied to claim 13, 18, and 29, and further in view of Brown. Applicants respectfully disagree.

Applicants previously argued that *prima facie* obviousness had not been established because both Brown and Sharon do not teach binary data structures. The Examiner replied that both Sharon and Brown teach "binary data structure [see Sharon: page 2, col 2, 0021, fig 2-3; Brown: col 2, line 33-35], and both Sharon and Brown suggests embedded memory systems." Applicants disagree. Sharon in paragraph 0021 and Figure 3 describes the iAN files that are clearly not true binary data structures. As described above, Sharon mentions the term "binary" only in paragraphs 0013 and 0024.

While Brown does mention converting a segmented non-binary width data structure into a binary memory structure (*See* Brown, col. 2, lines 1-2), Sharon, conversely, makes no mention of binary data. The combination of Sharon and Brown, therefore, does not result in any of the claimed limitations of the present invention. Applicants submit therefore, that the rejection of Claims 13, 18, and 29 is improper and that the rejection should be removed.

CONCLUSION

As a result of the presented remarks and amendments, Applicants assert that Claims 1-40 are patentable and in condition for prompt allowance. Should additional information be required, Examiner is respectfully asked to notify Applicants of such need. If any impediments to the prompt allowance of the claims can be resolved by a telephone conversation, the Examiner is respectfully requested to contact the undersigned.

Respectfully submitted,

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